In conclusion, TAA significantly relieved LVPG, and resulted in improvement of exercise capacity and abnormal exercise blood pressure response in pts with HOCM.

1209-90 Interest of Exercise Stress Testing After Implantation of an Automatic Implantable Cardioverter-Defibrillator

D. Boumal[1], T. Anguenot[2], N. Sadoul[3], C. De Chillou[3], Y. Bernard[2], J.P. Bassand[2], E. Aliot[3]. [1]*Cardiac Rehabilitation Center La Grange sur le Mont, Salins-les-Bains, France;* [2]*Department of Cardiology, University Hospital of Besançon, France;* [3]*Department of Cardiology, University Hospital of Nancy, France*

Background: Exercise testing is usually performed before the implantation of an automatic implantable cardioverter-defibrillator (ICD) in order 1) to evaluate patient's functional capacity, 2) to assess the occurrence of exercise-induced arrythmias and 3) to determine exercise maximal heart rate obtained with antiarrhythmic drugs, which is an important parameter for ICD programming in order to avoid inappropriate shocks or antitachycardia pacing related to sinus tachycardia. But we know little about exercise test after implantation of an ICD.

Methods: We performed 40 symptom-limited exercise stress tests (ST) on cycle-ergometer in 31 patients (pts) implanted with an ICD for life-threatening ventricular arrhythmias (2 women and 29 men, mean age 55 years [29–76 yrs], mean LVEF 35% [14–55%]). 23 had a history of myocardial infarction, 4 had a dilated cardiomyopathy, 3 a primary VF and 1 an arrhythmogenic right ventricular dysplasia. At the time ST was performed, 22 pts were on beta-blockers, 14 on amiodarone, 3 on mexiletine, 1 on hydroquinidine and 2 without antiarrhythmic drugs.

First 6 ST were performed with ICD on Monitor + Therapy Mode and a protocol with a first stage at 0 Watt (W) for 2 minutes (mn) and increased steps of 20 W every 2 mn. Next 27 ST were performed with ICD on Monitor + Therapy Mode but adapted steps in order to obtain a maximal ST duration of 10 mn. Last 7 ST were performed with adapted steps but ICD on Monitor only Mode.

Results: All pts completed ST without serious complications, the mean achieved workload was 111 W [20–160 W]. Exercise-induced arrhythmias were: 1 sustained accelerated idioventricular rythm, 2 non-sustained VT and isolated VPBs, couplets or triplets of VPBs in 18/31 pts. 3 inappropriate activations on sinus tachycardia were observed: 1 shock, 1 burst of antitachycardia pacing and 1 false VT sensing in a pt with ICD on temporary Monitor only Mode.

Conclusion: We conclude that ST 1) is safe; 2) is a useful adjunct to detect risk of inappropriate activation; 3) should be performed in every patient implanted with an ICD device and 4) could become an important parameter of programming, particularly with dual-chamber sensing ICDs.

1209-91 Use of gas Exchange Exercise Data in Setting Rate Adaptive Pacemakers Improves Quality of Life and Functional Status

R.V. Milani, C.J. Lavie, F. Abi-Samra. *Ochsner Medical Institutions, New Orleans, Louisiana, USA*

Background: Rate adaptive pacemakers are utilized to enhance quality of life in physically active patients by adjusting heart rate to meet the increasing metabolic demands imposed by exercising muscle during physical exertion. Standard exercise testing, however, does not accurately assess these metabolic parameters, and internal technology of rate adaptive pacemakers only provides an estimate of increasing demand.

Methods: Using the MOS Short Form-36 Survey, we assessed the added value of directly measuring metabolic parameters during exercise by cardiopulmonary exercise testing in 12 stable patients with rate adaptive pacemakers implanted (mean 11 ± 5 months) and using these data to enhance anaerobic threshold by rate adaptive pacemakers programming. Measures of functional status and quality of life were measured before and three months after cardiopulmonary exercise testing-guided adjustment of rate adaptive pacemakers (see table).

Results:

	Baseline	3 Months	% Change	P
Peak VO_2	17.3 ± 4.3	19.5 ± 4.9	12.7%	0.05
AT	12.1 ± 2.6	15.6 ± 3.1	28.9%	0.003
Function	33.2 ± 8.4	41.1 ± 6.8	23.8%	0.005
QoL	98.3 ± 15.2	110.6 ± 16.5	12.5%	0.01

VO_2 = oxygen consumption; AT = anaerobic threshold; QoL = quality of life

Conclusions: 1) cardiopulmonary exercise testing testing in rate adaptive pacemakers recipients is an accurate method of evaluating the heart's ability to meet the metabolic demands of exercise; 2) Gas exchange guided adjustment of rate adaptive pacemakers improves exercise capacity (including peak oxygen consumption and anaerobic threshold) as well as overall functional status and quality of life over standard methods.

1209-92 Relationship of Aerobic Capacity and Nutrient Intake in an Elderly Population

L.M. Sheldahl, J. Plouss, N.A. Wilke, D.E. Mattson, C. Wilson, I. Rudman, A.A. Abbasi, E.H. Duthie. *VA Medical Center/Medical College of Wisconsin, Milwaukee, WI, USA*

Background: Exercise and adequate nutrient intake are important for successful healthy aging. This study evaluates the relationship between aerobic capacity and nutrient intake in healthy elderly people.

Methods: 260 healthy, community dwelling older (60–80 years) subjects (143 men, 117 women) performed the following battery of tests: 1) a fatigue-limited treadmill test with measurement of peak oxygen uptake (VO_2 peak); 2) 3-day food diary; 3) body composition with dual energy x-ray absorptiometry; and 4) blood analysis. All subjects were independent and free of acute illnesses.

Results: VO_2 peak ranged from 12–50 and 14–37 ml/kg/min in men and women, respectively. The following table describes the relationship of key variables and VO_2 peak with effect of age partialled out.

	Men	P	Women	P
Calorie intake (kcal/kg)	0.33	< 0.01	0.32	< 0.01
Protein (g/kg)	0.30	< 0.01	0.24	< 0.05
Phosphorous (mg/kg)	0.40	< 0.01	0.29	< 0.01
Calcium (mg/kg)	0.32	< 0.01	0.31	< 0.01
Vitamin D (μg/kg)	0.20	< 0.05	0.26	< 0.05
Body fat (%)	-0.59	< 0.01	-0.38	< 0.01
Lean body mass (g)	-0.16	NS	-0.23	NS
Plasma cholesterol (mg/dL)	0.02	NS	-0.16	NS
Plasma HDL cholesterol (mg/dL)	0.21	< 0.05	0.11	NS

Conclusion: The data suggest that, in healthy elderly people, several important associations exist between aerobic capacity and nutrient intake.

1209-93 Metabolic Exercise Testing in Hypertrophic Cardiomyopathy: Relation of Submaximal Parameters to Clinical Features

S. Sharma, P. Elliott, G. Whyte, K. Prasad, A. Vamava. *William McKenna St George's Hospital, London, UK*

Background: Patients (pts) with hypertrophic cardiomyopathy (HCM) have reduced peak oxygen uptake (pV_{02}) during upright exercise testing. In patients with cardiovascular disease submaximal parameters are more useful. This study examines the relation of submaximal parameters to clinical symptoms.

Methods: 76 consecutive pts (31 F, 44 ± 15 yrs, 12–74) with HCM underwent metabolic exercise testing using a cycle ergometer ramp protocol. Maximal wall thickness was 18.4 ± 5.6 mm, 20 pts (26%) had an outflow gradient of > = 30 mm.Hg, 22 pts had exertional chest pain (CP), 38 were NYHA class I, 34 NYHA II, and 4 NYHA III, and 7 pts had syncope. Four parameters (pV_{02}, anaerobic threshold (AT), ventilatory equivalent for CO_2 (V_E/V_{CO2}) and aerobic efficiency $\Delta V_{02}/\Delta_{WR}$) were examined.

Results: Only 12 pts (16%) achieved > 80% predicted pV_{02} (mean 58 ± 18%; 20–96); 23 (30%) had a normal AT (> 40% pred V_{02}) (mean 33 ± 12%; 8–59); 48 (63%) had an abnormal V_E/V_{CO2} (> 30) (mean 34 ± 6.3; 23–54); 60 (79%) had abnormal $\Delta V_{02}/\Delta_{WR}$ (< 10) (mean 8.3 ± 1.5; 6–11). There was a correlation between % pred. pV_{02}, AT, V_E/V_{CO2} and $\Delta V_{02}/\Delta_{WR}$ (p < 0.0001). Pts in NYHA II or III had lower V_{02} (p = 0.001), AT (p = 0.0009), $\Delta V_{02}/\Delta_{WR}$ p = 0.008), and higher V_E/V_{CO2} (p = 0.03). There was no correlation between any parameter and CP, syncope, max wall thickness, or resting peak gradient.

Conclusion: Abnormal submaximal metabolic exercise parameters were strongly associated with symptomatic limitation suggesting that central factors and abnormal peripheral utilization of oxygen may be responsible for exercise limitation.

1209-94 Atrial Component of Left Ventricular Diastolic Function: Evaluation During Exercise by Echocardiography-Doppler

P. Becassis, F. Razcka, P. Messner-Pellenc, M. Hayot, L. Beck, J.-L. Corret, J.-M. Davy, C. Prefaut. *Service d'exploration fonctionnelle, Cardiologie B. Hopital A. de Villeneuve. Montpellier, France*

Background: The maximal oxygen uptake (VO2 max.) is a good tool for exercise aerobic capacity evaluation, correlated with cardiac output therefore to cardiac function. Diastolic function is assessed by transmitral Doppler blood flow velocity. The A wave (peak atrial filling velocity) is commonly